Remarks

Claims 1-19 and 21-22 are pending in the application. Applicants note that claims 12-13 were amended in a previous Amendment dated July 26, 2004 but were inadvertently labeled as being original claims. Claims 12-13 as included in this paper are correctly labeled as being previously presented. Claims 1, 8, 15, and 21-22 have been amended. Applicants submit that the amendments are supported by the specification.

Amendments to the Specification

The paragraphs on page 19 of the specification as originally filed have been amended to correct minor typographical errors in the measurement unit used for describing a size of a particle. These amendments are supported by claim 16 as originally filed and page 7 of the specification as originally filed. In addition, as explained in page 2 of the specification, particles having a size greater than about 150 nm can cause local shifts of sufficient size to create local depth of focus problems.

Amendment to the Drawings

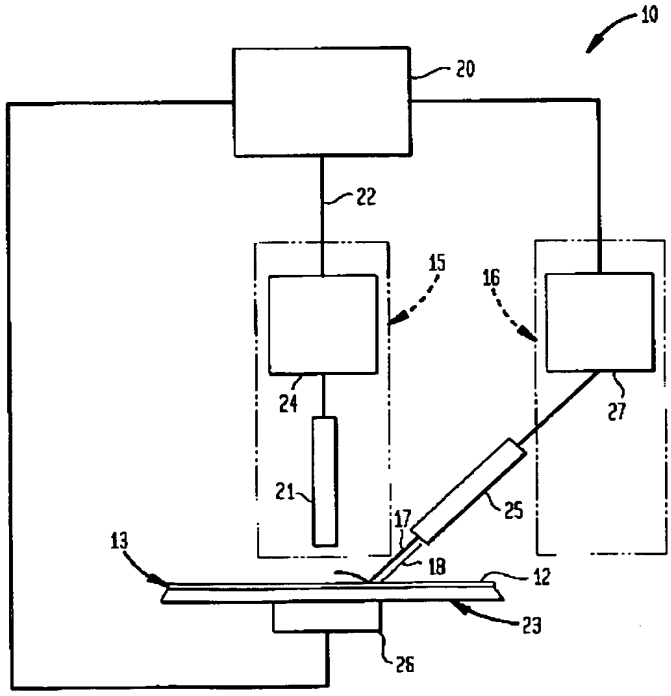
Figure 7 has been amended to correct a minor typographical error in the measurement unit used for describing a size of a particle. This amendment is supported by claim 16 as originally filed and page 7 of the specification as originally filed.

Rejections under 35 U.S.C. § 103

Claims 1-19, 21 and 22 were rejected under 35 U.S.C. 103(a) as being unpatentable over Hiatt et al. (U.S. Patent No. 5,963,315)("Hiatt") in view of Yin et al. (U.S. Patent No. 5,865,901)("Yin") and Boszormenyi et al. (U.S. Patent No. 6,394,105)("Boszormenyi"). These rejections are respectfully traversed. As will be fully explained, the cited prior art references individually or in combination do not disclose or suggest each and every feature of independent claims 1, 8, 15, 21 and 22 as required to raise a prima facie case of section 103 obviousness.

To raise a prima facie case of section 103 obviousness against claims 1, 8, 15, 21 and 22, as amended, the Hiatt reference, Yin reference and/or the Boszormenyi references must disclose or suggest the defining and the cleaning of sites with particles which are portions of the backside of the wafer that contact a chuck during a semiconductor process. With respect to the Hiatt reference, the Hiatt reference only discusses detecting of particles on a backside of the wafer and generic cleaning of the entire wafer after such contamination is detected. Therefore, Hiatt does not disclose or suggest the defining and cleaning of specific sites with particles on the backside of the wafer that contacts a chuck during wafer processing. The Office admits that Hiatt does not teach preferential localized cleaning of the specific areas.

With respect to the Yin reference, Yin rends a particle map of the substrate surface and analyzes the map data to determine particles on a top surface of the wafer. The Office is respectfully directed to Figure 1 of Yin shown below:



As can be seen in Figure 1 of Yin above, the surface cleaned is a frontside surface of the wafer 13 and the backside surface of the wafer 12 lays on the substrate holder. As shown in Figure 1

of Yin, the backside of the wafer 13 is not cleaned by the impinging stream. In contrast, the claimed inventions include defining a portion of a backside of the wafer which contacts a chuck during a semiconductor process and the cleaning of that portion of the wafer. Applicants respectfully submit that Yin makes no mention of defining or cleaning of backside portions of the wafer that contacts the chuck during a semiconductor manufacturing process. Applicants respectfully submit that because Figure 1 of Yin shows the backside surface of the substrate 13 as resting on the substrate holder 23, the apparatus as shown in Yin's Figure 1 does not appear to be capable of cleaning the backside of the wafer since the impinging stream appears to only have access to the frontside surface. Therefore, as can be seen, the Yin reference does not disclose, teach, or suggest the defining and cleaning of a portion of the backside of the wafer that contacts a chuck.

Moreover, Applicants respectfully submit that one skilled in the art would not be motivated to combine the teachings of Yin and Hiatt to generate the claimed invention because the apparatus as defined by Yin does not appear to have the capability to clean specific sites of the backside of the wafer that contacts the substrate holder.

With respect to the Boszormenyi reference, Boszormenyi only teaches a generic use of laser to clean wafers. The claimed inventions as discussed above, include the features of defining portions of a wafer which contact a chuck and cleaning those portions of the wafer. In contrast, Boszormenyi does not even mention or suggest usage of a chuck in wafer processing let alone defining and cleaning a portion of the wafer that contacts the wafer. In fact, Boszormenyi clearly teaches that the entire surface of a wafer is required to be cleaned. The Office is respectfully directed to column 2, lines 19-22 which states as follows:

> Since the entire surface of every workpiece needs to be cleaned and not just samples the tool allows 100% inspection which would be cost prohibitive if the inspection was to carried out off-line. (Emphasis Added).

Therefore, Boszormenyi requires that the entire surface of wafer be cleaned. Consequently, Applicants respectfully submit that Boszomenyi does not disclose or suggest defining or cleaning of a portion of a wafer which contacts a chuck during a semiconductor fabrication processing.

In addition, claim 1, as amended, includes the feature of defining cleaning sites on a backside of a wafer having particles with a size greater than 150 nm. Applicants respectfully submit that none of the cited prior art references discusses defining sites with specific particles with a size greater than 150 nm. Therefore, Applicants respectfully submit that this feature is not disclosed or suggested by the cited prior art references.

Consequently, Applicants respectfully submit that the Hiatt, Yin, and Boszormenyi references, individually or in combination, do not teach or suggest all of the features of the claimed inventions. In addition, for the reasons discussed above, Applicants respectfully submit that one skilled in the art would not be motivated to combine the cited prior art references as suggested by the Office. As a result, Applicants respectfully submit that Office has failed to raise a prima facie case of obviousness. Consequently, Applicants respectfully request that the section 103 rejections with respect to independent claims 1, 8, 15, 21, and 22 be withdrawn. In addition, the dependent claims are submitted to be allowable for at least the reasons discussed above for the independent claims.

In view of the foregoing, Applicants respectfully submit that the pending claims are in condition for allowance and therefore respectfully request a notice of allowance. Accordingly, a notice of allowance is respectfully requested. In the event a telephone conversation would expedite the prosecution of this application, the Examiner may reach the undersigned at **(408) 749-6900. ext. 6927**. If any additional fees are due in connection with the filing of this paper,

then the Commissioner is authorized to charge such fees to Deposit Account No. 50-0805 (Order No. LAM2P317). A copy of the transmittal is enclosed for this purpose.

Respectfully submitted,
MARTINE & PENILLA, LLP

Edmund H. Mizumoto
Registration No. 46,938

710 Lakeway Drive, Suite 200
Sunnyvale, California 94085
Telephone: (408) 749-6900
Customer No. 25920

Amendments to the Drawings

The attached sheet of drawings includes changes to Figure 7. The replacement sheet replaces the original sheet with Figure 7. An annotated marked-up sheet showing the change has also been included. In Figure 7, a minor typographic error has been corrected as shown on the annotated marked-up sheet and as discussed below in the Remarks section.

Annotated Marked-up copy

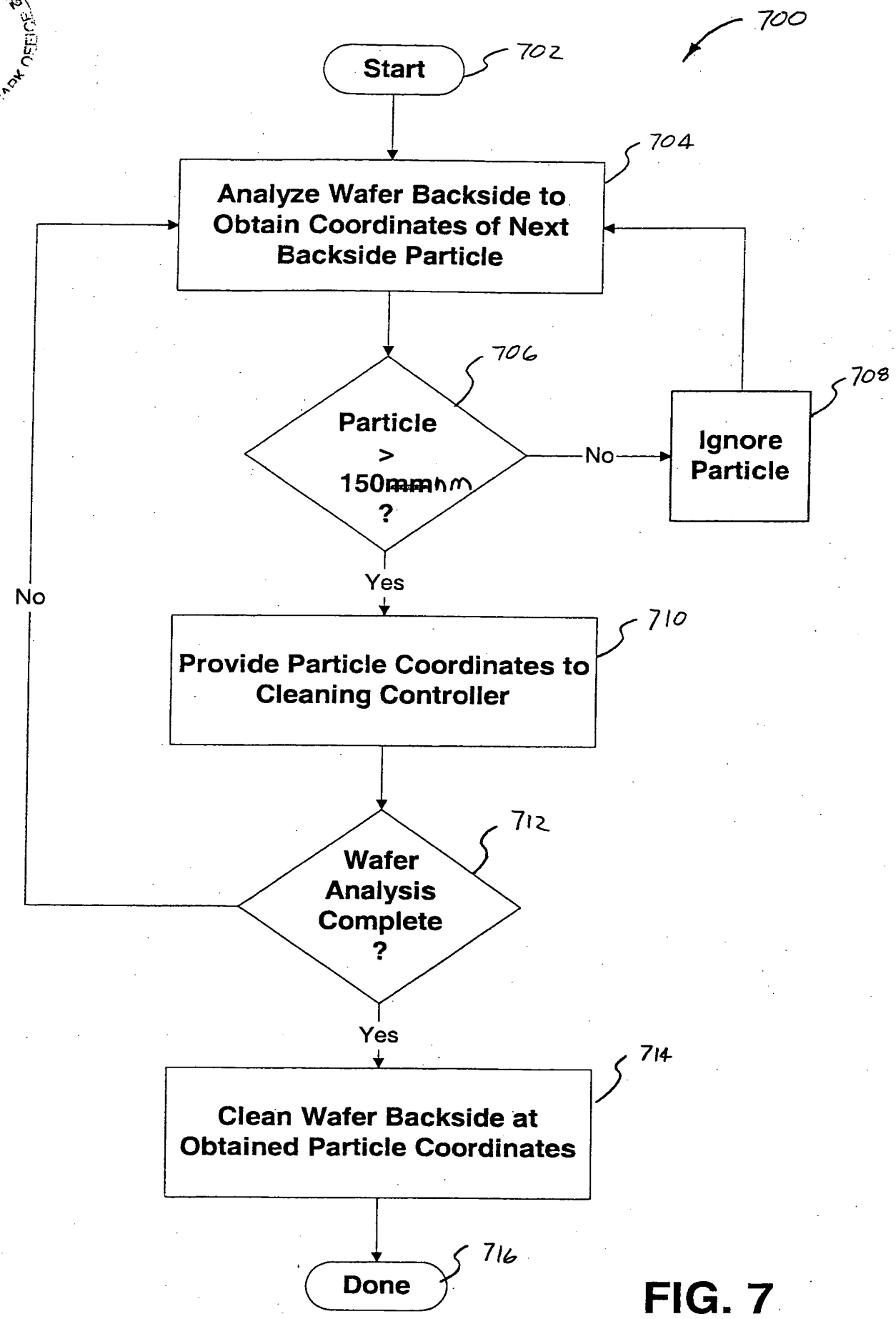


FIG. 7